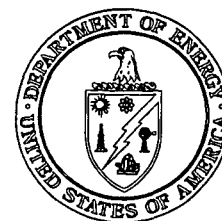




Department of Energy

Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246
(513) 648-3155



FEB 24 2005

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0171-05

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Ms. Val Orr
Ohio Environmental Protection Agency
Division of Drinking and Ground Waters – UIC Unit
P.O. Box 1049
Columbus, OH 43216-1049

Dear Mr. Saric, Mr. Schneider, and Ms. Orr:

THIRD QUARTER 2004 RE-INJECTION OPERATING REPORT, FERNALD CLOSURE PROJECT

In accordance with the Re-Injection Demonstration Test Plan, enclosed for your review is the Third Quarter 2004 Re-Injection Operating Report.

This will be the last quarterly re-injection report based on well-based re-injection per the Re-Injection Demonstration Test Plan. On September 25, 2004 well-based re-injection was shut down to facilitate construction of the Converted Advanced Wastewater Treatment (CAWWT) facility. The decision has been made not to re-start well based re-injection. Other operational strategies to enhance the aquifer remedy are being explored instead, such as inducing recharge to the Great Miami Aquifer through the Storm Sewer Outfall ditch.

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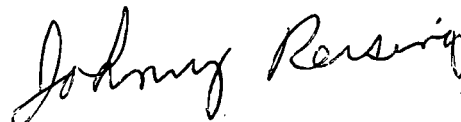
Mr. James A. Saric
Mr. Tom Schneider
Ms. Val Orr

-2-

DOE-0171-05

If you have any questions or need further information, please contact Dave Lojek at (513) 648-3127.

Sincerely,



for William J. Taylor
Director

FCP:Lojek

Enclosure: As Stated

cc w/enclosure:

D. Lojek, OH/FCP
J. Reising, OH/FCP
T. Schneider, OEPA-Dayton (three copies of enclosure)
V. Orr, OEPA-Columbus
G. Jablonowski, USEPA-V, SR-6J
M. Cullerton, Tetra Tech
F. Bell, ATSDR
M. Shupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald, Inc./MS78

cc w/o enclosure:

R. Abitz, Fluor Fernald, Inc./MS64
K. Broberg, Fluor Fernald, Inc./MS52-5
J. Chiou, Fluor Fernald, Inc./MS64
E. Henry, Fluor Fernald, Inc./MS52-5
W. Hertel, Fluor Fernald, Inc./MS52-5
M. Kopp, Fluor Fernald, Inc./MS52-5
T. Poff, Fluor Fernald, Inc./MS65-2
D. Powell, Fluor Fernald, Inc./MS64
ECDC, Fluor Fernald, Inc./MS52-7

THIRD QUARTER 2004 RE-INJECTION OPERATING REPORT

Re-injection at Fernald is exempted under 40 CFR 300.400(e)(1) from requiring a permit, as it is a CERCLA action. Ohio EPA Guidelines (OEPA 1997), suggest monthly operating reports be submitted that include:

- I. An analysis of the injectate
 - Composite daily total uranium results from the injectate source (AWWT Expansion Facility effluent) for days when re-injection occurred for the third quarter of 2004 are shown in Figure 1.
 - The monthly grab sample results for the third quarter 2004 are provided in Table 1.
- II. The volume and rate of re-injection
 - Table 2 summarizes third quarter 2004 operational data.
- III. A description of any well maintenance and rehabilitation procedures conducted.
 - No well maintenance or rehabilitation occurred in the third quarter of 2004.

DOE has submitted monthly reports since re-injection began in September 1998 through March 2002. Due to the routine nature of the reports, DOE and Ohio EPA agreed in March 2002 that the monthly information would be provided in quarterly reports beginning with the report for the second quarter 2002.

Routine monitoring of the aquifer in the re-injection area is conducted as part of the groundwater remedy performance-monitoring program specified in Fernald's Integrated Environmental Monitoring Plan (IEMP). Results of the IEMP are reported semi-annually and are available for viewing on the Fernald website, www.fernald.gov. During the third quarter of 2004 re-injection took place in seven re-injection wells. Re-Injection locations are shown in Figure 2.

This report will be the last quarterly re-injection report based on well-based re-injection per the Re-injection Demonstration Test Plan. On September 25, 2005, well-based re-injection was shut down to facilitate construction of the CAWWT facility. The decision has been made not to re-start well based re-injection. Other operational strategies to enhance the aquifer remedy are being explored instead, such as inducing recharge to the Great Miami Aquifer through the Storm Sewer Outfall ditch.

ANALYSIS OF THE INJECTATE

A reduced injectate analyte list became effective on January 1, 2004. The U.S. EPA approved the reduced analyte list on November 18, 2003 and the Ohio EPA on October 29, 2003.

Due to an inadvertent oversight, nitrate and fluoride were not analyzed for in July. The July sample had a reported carbon disulfide groundwater FRL exceedance that is considered suspect. The reported carbon disulfide concentration in July was 25 ug/L; the FRL for carbon disulfide is 5.5 ug/L. A duplicate sample on the same day had a carbon disulfide concentration of 2.05 ug/L, and the trip blank had a concentration of 42.6 ug/L. Both the August sample and September samples had non-detects for carbon disulfide.

The September sample had a reported nitrate groundwater FRL exceedance. The nitrate concentration of the September sample was 39.6 mg/L; the groundwater FRL concentration is 11.0 mg/L. Because well-based re-injection was shut down permanently on September 25, 2005, additional investigation into the validity of the exceedance was not pursued.

The following total uranium concentrations were measured in the grab and the composite sample, respectively:

- July 21, 2004 – 1.52 micrograms per liter ($\mu\text{g/L}$) and 1.4 $\mu\text{g/L}$
- August 23, 2004 – 2.28 micrograms per liter ($\mu\text{g/L}$) and 2.3 $\mu\text{g/L}$
- September 14, 2003 – 0.481 micrograms per liter ($\mu\text{g/L}$) and 0.1 $\mu\text{g/L}$

TABLE 1
ANALYSIS OF INJECTATE

Constituents ^a	Results ^b			Groundwater FRL ^c	Constituent Type ^d	Basis for FRL ^e
	Jul. 21, 2004	Aug 23, 26 2004	Sep 14, 2004			
General Chemistry				mg/L		
Nitrate	NS	0.8 J	39.6	11.0	MP	B
Inorganics				mg/L		
Antimony	U	U	U	0.006	N	A
Arsenic	U	0.0016 B	U	0.05	N	A
Boron	0.0376 B	0.0539 B	0.0487 B	0.33	MP	R
Fluoride	NS	0.227	0.278	4.0	MP	A
Lead	0.0002 B	U	U	0.015	N	A
Manganese	U	0.0017 B	U	0.9	N	B
Molybdenum	0.0017 B	0.0016 B	0.0016 B	0.10	N	A
Nickel	0.0018 B	0.0024 B	0.0016 B	0.1	N	A
Zinc	0.0028 B	0.0021 B	0.002 B	0.021	N	B
Radionuclides				pCi/L		
Technetium-99	U	U	U	94	MP	R*
				µg/L		
Uranium, total	1.52	2.28	0.481	30.0	MP	A
Organics				µg/L		
Carbon disulfide	25	U	U	5.5	N	A
Trichloroethene	U	U	U	5.0	N	A

Results Qualifiers: U = Nondetected result, B (inorganics) = Reported result is greater than the instrument detection level but less than the contract required detection limit, B (organics) = The compound is detected in an associated lab blank. J = Reported result is positively detected but is estimated; the result is still usable for making decisions, NS = Not Sampled.

^a Constituents taken from Table 2-1 of the Re-Injection Demonstration Test Plan, and are those agreed upon by U.S. EPA (Letter dated November 18, 2003 Re: Monthly Injectate Analyte List) and by the Ohio EPA (Letter dated October 29, 2003, Re: Approval to Revise Monthly Injectate Grab Sample Analyte List)

^b If a duplicate sample was analyzed, then the highest concentration between the regular sample and duplicate sample is reported.

^c From Table 9-4 in the Operable Unit 5 Record of Decision Report. NS = Not Sampled

^d Constituent types from Appendix A of IEMP, Rev. 1. MP indicates that the constituent has been identified as being able to migrate to the aquifer. N indicates that the constituent has been identified as not being able to migrate to the aquifer.

^e A - Applicable or relevant and appropriate requirement based (MCL, PMCL, etc.), B - Based on 95th percentile background concentrations, R - Risk-based, R* - Risk-based radionuclide cleanup levels include constituent specific 95th percentile background concentration.

TABLE 2
RE-INJECTION WELL OPERATIONAL SUMMARY SHEET
THIRD QUARTER 2004

Well Number	Reporting Period (hours) ^a	Hours Not Injecting ^b	Hours Injecting ^c	Operational Percent ^d	Million Gallons Injected ^e	Target / Average ^f Operating Injection Rate (gpm)
33253 (IW-8a) ^g	2208	216	1992	90.2	22.970	200 / 192
33254 (IW-9a) ^g	2208	228	1980	89.7	22.947	200 / 193
22109 (IW-10)	2208	228	1980	89.7	22.648	200 / 191
33255 (IW-10a) ^h	2208	228	1980	89.7	22.661	200 / 191
22240 (IW-11)	2208	228	1980	89.7	22.824	200 / 192
22111 (IW-12) ⁱ	2208	2200	8	0.4	0	200 / 0
31563 (IW-16)	2208	1623	585	26.5	7.169	200 / 204
33263 (IW-29)	2208	1647	561	25.4	4.611	125 / 137
Injection Pond ^j	2208	2208	0	0	0	100 / 0

^a First operational shift reading on July 1, 2004 to first operational shift reading on October 1, 2004

^b System downtime as noted on Figure 1

^c Hours in reporting period - Hours not injecting

^d (Hours injecting/Hours in reporting period) x 100

^e Summation of daily totalizer differences

^f Gallons Injected/(Hours Injecting x 60)

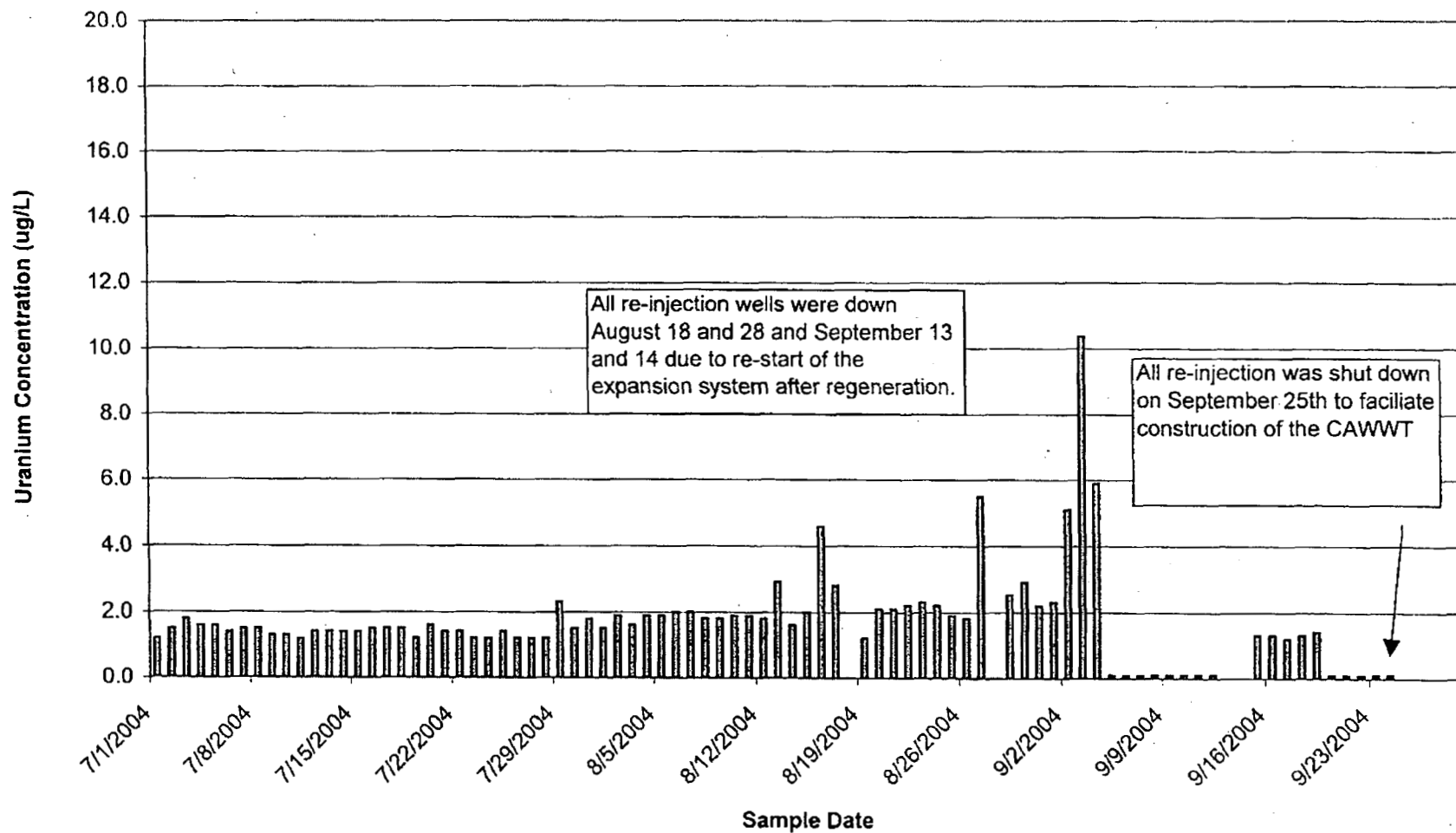
^g In 2002, Re-Injection Wells 8 and 9 were replaced with new wells, 8a and 9a. These two replacement wells began operating in November 2002

^h A new Re-Injection Well (IW-10a) began operating on May 22, 2003.

ⁱ Re-Injection in Well IW-12 was suspended on July 21, 2003. The area next to IW-12 is no longer in the 30-ug/L total uranium plume.

^j While active re-injection of treated groundwater did not occur during the quarter, passive injection of storm water runoff continued.

Figure 1
Daily Composite Uranium Results from AWWT Expansion System
Days when Re-Injection Occurred



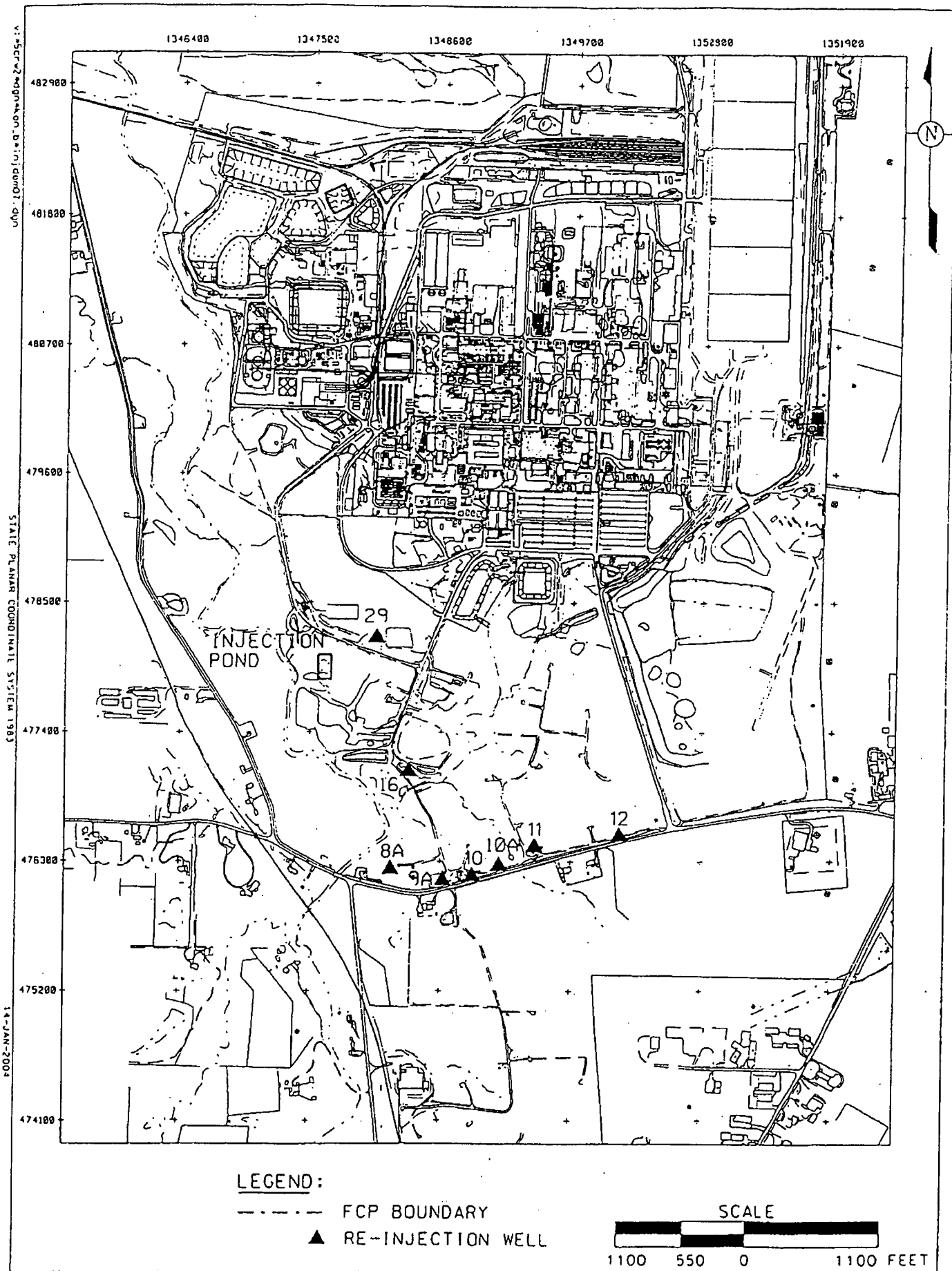


FIGURE 2. LOCATION OF RE-INJECTION WELLS AND INJECTION POND